In the Claims

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing. This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) Isolated RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of ~~an~~ the mRNA to which it corresponds.

2. (previously presented) Isolated RNA of claim 1 that comprises a terminal 3' hydroxyl group.

3. (currently amended) Isolated RNA of claim 1 which is chemically synthesized RNA ~~or an analog of a naturally occurring RNA~~.

4. (currently amended) An analog of isolated RNA of claim 1, wherein the analog differs from the RNA of claim 1 by the addition, ~~deletion,~~ substitution or alteration of one or more nucleotides, wherein the one or more nucleotides added, substituted or altered is a non-naturally occurring nucleotide or deoxyribonucleotide.

5. (currently amended) Isolated RNA of from about 21 to about 23 nucleotides that has sequence correspondence to a gene and inactivates ~~a~~ the corresponding gene by transcriptional silencing.

6-11. (previously withdrawn)

12. (currently amended) RNA of about 21 to about 23 nucleotides produced by the method ~~of Claim 9~~ comprising:

(a) combining double-stranded RNA with a soluble extract that mediates RNA interference, thereby producing a combination; and

(b) maintaining the combination of a) under conditions in which the double-stranded RNA is processed to RNA of from about 21 to about 23 nucleotides in length.

13-15. (previously withdrawn)

16. (currently amended) Isolated RNA of from about 21 to about 23 nucleotides that mediates RNA interference of mRNA of a gene to be degraded produced by the method ~~of Claim 15~~ comprising:

(a) combining double-stranded RNA that corresponds to a sequence of the gene to be degraded with a soluble extract that mediates RNA interference, thereby producing a combination; and

(b) maintaining the combination of (a) under conditions under which the double-stranded RNA is processed to RNA of from about 21 to about 23 nucleotides that mediates RNA interference of the mRNA of the gene to be degraded, thereby producing RNA of from about 21 to about 23 nucleotides that mediates RNA interference of the mRNA, and further comprising isolating RNA of from about 21 to about 23 nucleotides from the combination.

17-42. (previously withdrawn)

43. (currently amended) A pharmaceutical composition comprising RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of the mRNA to which it corresponds and an appropriate carrier.

44-47. (previously withdrawn)

48. (canceled herewith) ~~RNA of claim 16, isolated using gel electrophoresis~~.

49 (canceled herewith) ~~RNA of claim 16, isolated using non-denaturing methods~~.

50 (canceled herewith) ~~RNA of claim 16, isolated using non-denaturing column chromatography~~.

51-71. (previously withdrawn)

72. (currently amended) Isolated DNA comprising DNA encoding RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of the mRNA to which the segments correspond.

73. (currently amended) Isolated DNA comprising DNA encoding RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to a gene and inactivates ~~a~~ the corresponding gene by transcriptional silencing.

74. (currently amended) Isolated DNA comprising DNA encoding RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and mediates RNA interference of the mRNA of a gene.

75. (currently amended) Isolated DNA comprising DNA encoding RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and targets the mRNA of a protein for degradation.

76. (currently amended) Isolated double-stranded RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of ~~an~~ the mRNA to which it corresponds.

77. (previously presented) Isolated double-stranded RNA of claim 76 that comprises a terminal 3' hydroxyl group.

78. (currently amended) Isolated double-stranded RNA of claim 76 which is chemically synthesized RNA ~~or an analog of a naturally occurring RNA~~.

79. (currently amended) An analog of isolated double-stranded RNA of claim 76, wherein the analog differs from the double-stranded RNA of claim 76 by the addition, ~~deletion,~~ substitution or alteration of one or more nucleotides, wherein the one or more nucleotides added, substituted or altered is a non-naturally occurring nucleotide or deoxyribonucleotide.

80. (currently amended) -Isolated double-stranded RNA of from about 21 to about 23 nucleotides that has sequence correspondence to a gene and inactivates ~~a~~ the corresponding gene by transcriptional silencing.

81. (currently amended) A pharmaceutical composition comprising double-stranded RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of the mRNA to which it corresponds and an appropriate carrier.

82. (currently amended) Isolated DNA comprising DNA encoding double-stranded RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of the mRNA to which the segments correspond.

83. (currently amended) Isolated DNA comprising DNA encoding double-stranded RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to a gene and inactivates ~~a~~ the corresponding gene by transcriptional silencing.

84. (currently amended) Isolated DNA comprising DNA encoding double-stranded RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and mediates RNA interference of the mRNA of a gene.

85. (currently amended) Isolated DNA comprising DNA encoding double-stranded RNA that is processed in eukaryotic cells to RNA segments of about 21 to about 23 nucleotides in length that have sequence correspondence to an mRNA and targets the mRNA of a protein for degradation.

86. (currently amended) Isolated RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of ~~an~~ the mRNA to which it corresponds, wherein the isolated RNA is obtained from double-stranded RNA that has been cleaved into fragments of about 21 to about 23 nucleotides.

87. (previously presented) Isolated RNA of claim 86 that comprises a terminal 3' hydroxyl group.

88. (currently amended) Isolated RNA of claim 86 which is chemically synthesized RNA ~~or an analog of a naturally occurring RNA~~.

89. (currently amended) An analog of isolated RNA of claim 86, wherein the analog differs from the RNA of claim 86 by the addition, ~~deletion,~~ substitution or alteration of one or more nucleotides wherein the one or more nucleotides added, substituted or altered is a non-naturally occurring nucleotide or deoxyribonucleotide.

90. (currently amended) Isolated RNA of from about 21 to about 23 nucleotides that inactivates a corresponding gene by transcriptional silencing, wherein the isolated RNA is obtained from double-stranded RNA that has been cleaved into fragments of about 21 to about 23 nucleotides and that has sequence correspondence to the gene.

91. (currently amended) A pharmaceutical composition comprising RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference of ~~an~~ the mRNA to which it corresponds, wherein the isolated RNA is obtained from double-stranded RNA that has been cleaved into fragments of about 21 to about 23 nucleotides.

92. (currently amended) Isolated DNA comprising DNA encoding RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference by directing cleavage of the mRNA to which the RNA correspond.

93. (currently amended) Isolated DNA comprising DNA encoding RNA of from about 21 to about 23 nucleotides that has sequence correspondence to a gene and inactivates ~~a~~ the corresponding gene by transcriptional silencing.

94. (currently amended) Isolated DNA comprising DNA encoding RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and mediates RNA interference of the mRNA of a gene.

95. (currently amended) Isolated DNA comprising DNA encoding RNA of from about 21 to about 23 nucleotides that has sequence correspondence to an mRNA and targets the mRNA of a protein for degradation.

96. - 102. (withdrawn).

103. (New) Isolated RNA of claim 1 which is an analog of a naturally occurring RNA.

104. (New) Isolated double-stranded RNA of claim 76 which is an analog of a naturally occurring RNA.

105. (New) Isolated RNA of claim 86 which is an analog of a naturally occurring RNA.

106. (New) Isolated RNA of any one of claims 1, 43, 72, 74, 75, 76, 81, 82, 84, 85, 86, 91, 92, 94, and 95 wherein the isolated RNA is complementary to the mRNA.

107. (New) Isolated RNA of any one of claims 5, 73, 80, 83, 90, and 93 wherein the isolated RNA is complementary to the gene.

108. (New) Isolated RNA of any one of claims 1, 5, 12, 16, 43, 72, 73, 74, 75, 76, 80, 81, 82, 83, 84, 85, 86, 90, 91, 92, 93, 94, and 95 wherein the mRNA is human mRNA.

109. (New) Isolated RNA of any one of claims 1, 5, 12, 16, 43, 72, 73, 74, 75, 76, 80, 81, 82, 83, 84, 85, 86, 90, 91, 92, 93, 94, and 95 wherein the mRNA is mammalian mRNA.